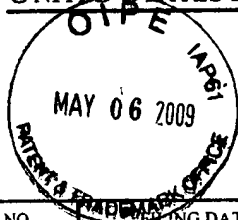




5-7-09

UNITED STATES PATENT AND TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/797,255

03/10/2004

Brian P. Roarty

5375

37387 7590 11/07/2008
GEORGE S. COLE, ESQ.
495 SEAPORT COURT, SUITE 101
REDWOOD CITY, CA 94063

EXAMINER

BOYD, ERIN M

ART UNIT	PAPER NUMBER
----------	--------------

3663

MAIL DATE	DELIVERY MODE
-----------	---------------

11/07/2008

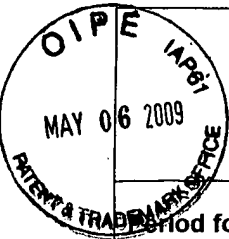
PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

05/07/2009 EFLORES 00000004 10797255
01 FC:2253

555.00 OP



Office Action Summary

Application No.	Applicant(s)	
10/797,255	ROARTY, BRIAN P.	
Examiner	Art Unit	
Erin M. Boyd	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2008.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/10/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species 1C and 2B in the reply filed on 9/12/2008 is acknowledged. Because applicant's election of Nozzle species 1C (figure 3) is inconsistent with applicant's election of Energy Adding Means species 2B (inducing a low energy nuclear reaction within the nozzle) (See specification; page 14, lines 15-28), Examiner phoned Attorney George Cole on 10/24/08. A phone election of Species 1E (figure 6) was made overriding the previous election of species 1C and Claims 4-23 were identified as the claims encompassing the elected invention.
2. Claims 1-3 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/7/2008.
3. Applicant's election with traverse in the reply filed on 4/7/2008 is acknowledged. The traversal is on the ground(s) that "the preliminary-specified claims are sufficiently related as to justify examination together and those identified as belonging to separate species are covered by a generic claim which they are expressly dependent upon that is allowable". This is not found persuasive because where an application includes claims directed to different embodiments or species that could fall within the scope of a generic

claim, restriction between the species is proper because the species are distinct.

Where species under a claim genus are not connected in any design, operation, or effect under the disclosure, the species are independent inventions (see MPEP §806.04)

The requirement is still deemed proper and is therefore made FINAL.

4. It is also noted that although Applicant states that Species 1E (and for that matter Species 1C (figure 3) also) includes Claims 11-23, Figure 6 does not show the optional third block of insulating material separating the first structural core and heat transference block, as recited in Claim 11 (Species 1B; figures 2A and 2B show this feature). Thus, Claim 11 does not encompass the elected invention. Claims 12-23 depend on Claim 11; therefore, they too do not encompass the elected invention. Examiner has examined Claims 4-10, wherein said claims encompass the elected invention.

Information Disclosure Statement

5. The information disclosure statement (IDS) submitted on 3/10/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The specification is objected to because the disclosed invention lacks patentable utility. Although applicant's invention may be operable if the combination of the directly stimulating means were used in combination with the indirectly stimulating means (specification; page 15, lines 22-23), applicant elects the indirect stimulating means (which is stated to enable low energy nuclear reactions (LENR)) alone. LENR in this system lacks credibility in view of the over all situation with regard to the production of cold fusion (LENR). The 2004 DOE review on Cold Fusion (reference attached) found the claims that D-D fusion occurs spontaneously when deuterium is introduced into Palladium metal unconvincing, which was also the case in the 1989 DOE review (also attached). Specifically, Reviewer #10 (2004 DOE Report, page 21-22) found the production of cold fusion during electrolysis in a calorimeter, based on the prior art, to be unconvincing due to the complicated system, measurement difficulty and sufficiently small effects. Even the more positive reviews, such as that by Reviewer 11, find that palladium electrolysis, by which cold fusion occurs, is inconclusive noting the lack of consistency of "excess heat" and reproducibility.

Fukai casts doubt on the occurrence of cold fusion induced by tunneling through the Coulomb barrier (Introduction, paragraph 2, lines 4-8) stating that there is no way to sustain such close D-D pairs in any solids (page 269, paragraph 4, lines 1-2) (See also page 271, paragraph 4, lines 1-2).

Shanahan questions the conclusion of apparent "excess heat" from cold fusion due to possible recombination considerations at the electrode in an electrolytic cell.

Art Unit: 3663

Shanahan suggests that in the absence of definitive data ruling out recombination as the source of the apparent "excess heat", the conclusion that cold fusion is the cause the said "excess heat" is premature (Abstract). Applicant's disclosure does not provide insight or analysis into why recombination at the electrode is not the cause of the alleged "excess heat" production.

In light of the recent DOE review conclusions, numerous other references which are skeptical of the occurrence of LENR in condensed matter, and the lack of quantitative or qualitative data in the instant application, the disclosed invention is presently considered to be inoperable and; therefore, lacks utility. As Reviewer #1 stated in the 2004 DOE review, "Extraordinary results require extraordinary proof. Such proof is lacking".

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to adequately teach how to make and/or use the invention, i.e., failing to provide an adequate written description. While the specification discloses types direct excitation means, it fails to explicitly disclose what the indirect excitation means is. Without said information, it would be impossible for one of ordinary skill to make or use the invention. The disclosure also fails to provide:

- a. quantitative requirements as to the amount of heat necessary to cause the phase change of the fluid (i.e. thermal requirements);
- b. whether or not continuous heating of the nozzle is required to sustain the phase change at the exhaust;
- c. how or by what method the indirect excitation means enables, supports, or encourages LENR;
- d. the D/Pd atom ratio (Reviewer #6 on page 11, paragraph 5 of the 2004 DOE Report states that a D/Pd atom ratio of .89 is the threshold for "excess heat" and Sakamoto et al., Abstract, lines 24-28, discloses that below a D/Pd ratio of .85 calorimetric data determined that "excess heat" beyond that which is expected from the chemical reaction is not supported.)
- e. calibration procedures
- f. evidence of reproducibility
- g. data suggesting the presence of D-D fusion products (e.g. excess tritium, neutron bursts, helium-3) after the alleged excess heat was produced.

In view of the above considerations, the lack of utility and adequate written description, the specification would require one of ordinary skill in the art to perform undue experimentation in order to practice the invention. Therefore, the specification is also objected to under 35 U.S.C. 112, first paragraph, as failing to adequately teach how to make and/or use the invention, i.e., failing to provide an enabling disclosure.

(A) The breadth of the claims require experimentation to determine if the energy claimed to be transferred into the nozzle actually heats the nozzle (through LENR) and if the heat, if it were to exist, is sufficient to induce a phase change of the fluid;

(B) The nature of the invention is achieving low energy fusion reactions in condensed matter, in order to generate heat, in much the same way as Fleischmann and Pons claimed to do in 1989;

(C) The state of the prior art is such that since 1989 researchers have been attempting reproduce the results of Fleischmann and Pons (e.g. LENR), but after decades of research and minimal progress, the 2004 U.S. DOE Cold Fusion report concludes that prior art is inconclusive and/or unconvincing.

(D) The level of ordinary skill in the art is not adequate to perform hot fusion, but not cold fusion, especially in a repeatable manner (see 2004 DOE final report, page 3, paragraph 4, lines 12-14);

(E) The level of predictability in the art is nil. It is known that fusion reactions are capable of occurring under certain circumstances and when they do, at least some heat is produced. However, the D-D fusion reaction suggested for producing heat in the instant application is inconclusive. In fact, the products (helium above background levels and fusion products (e.g. neutrons, tritium, etc.)) of the D-D reaction are usually

not or never present after heat from a cold fusion reaction is reported to be present (2004 DOE report; page 3, paragraph 4, lines 1-6 and 1989 DOE report; page 1: paragraph 2, lines 6-9).

(F) The amount of direction, or lack thereof, provided by the inventor in the disclosure omits information essential to the utility and/or manufacture of the claimed invention (i.e. an example of an indirect excitation means, how the indirect excitation means functions to enable LENR, temperatures requirements, etc.);

(G) The inventor has not provided any working examples indicated by a precise description or quantitative or qualitative data;

(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure would require at least significantly more research into the material science aspects of deuterated metal, as suggested in the 2004 DOE report (page 5; paragraph 4, lines 4-6). In fact, as stated in the 1989 DOE report (page 3; paragraph 5, lines 1-3); making or using this invention would require the invention of an entirely new nuclear process.

On the basis of consideration (A)-(H), it is concluded that the disclosure fails to provide enablement (*In re Wands* 858, F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Circuit 1988)).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 4-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The reasons for this rejection are the same as the reasons for the objection to the specification for lack of enablement as given above.

12. Claims 4-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The reasons for this rejection are the same as the reasons for the objection to the specification for lack of enablement as given above.

13. Claims 4-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As a result of the claims lacking written support and enablement, they are vague and ill-defined in their metes and bounds; therefore, rendering them indefinite.

Claim Rejections - 35 USC § 101

14. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claims 4-10 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The reasons for this rejection are the same as the reasons for the objection to the specification for lack of utility as given above.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

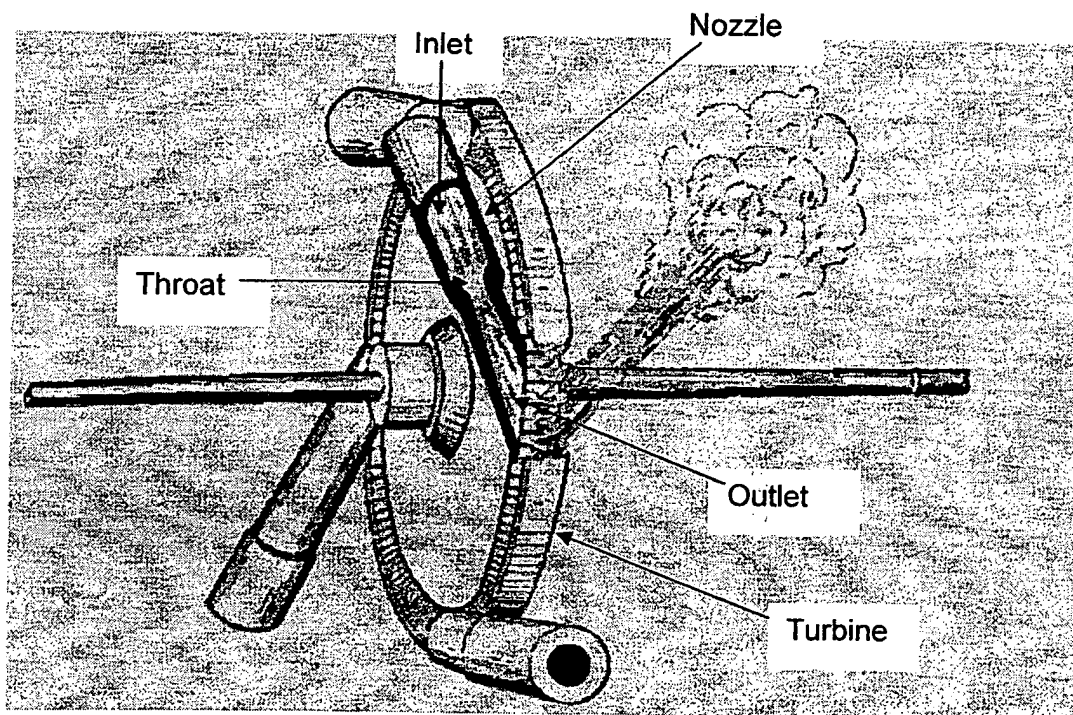
17. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steam Turbines, Practice and Theory (herein after "Gray French") in view of U.S. Patent No. 5,632,871 (herein after "Patterson").

18. Regarding Claim 4, Gray French teaches a system comprising a nozzle having an inlet, a throat, and an exhaust (see figure below); a fluid flowing through the nozzle; and a means (i.e. turbine) for transforming the flow from the exhaust into work outside the system. Gray French fails to teach a means embedded within the nozzle for transferring energy into and heating the nozzle, thereby indirectly transferring energy into and heating the fluid and inducing a phase change in the fluid. Patterson teaches a means 38/44/36 embedded within a nozzle 12 for transferring energy into and heating the nozzle 12 (column 2, lines 15-17); thereby indirectly (through means 36) transferring energy into and heating the fluid and inducing a phase change in the fluid (column 3, lines 59-60).

A motivation for indirectly supplying energy to the fluid in the manner above described is to form the necessary electrolytic current flow path between the cathode 38 and anode 44 (U.S. Patent No. 5,318,675; Patterson, column 5, lines 56-59). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to embed said means 36 in the nozzle 12.

Art Unit: 3663

19. Regarding Claim 5, Gray French teaches a system wherein the cross-sectional interior volume of the inlet, throat, and exhaust of the nozzle vary only across one plane perpendicular to the axis of the fluid flowing through the nozzle (see figure below).



Gray French; Figure 1, page 67

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. Boyd whose telephone number is (571) 270-5378. The examiner can normally be reached on Monday - Friday 9:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. M. B./
Examiner, Art Unit 3663

/Johannes P Mondt/
Primary Examiner, Art Unit 3663